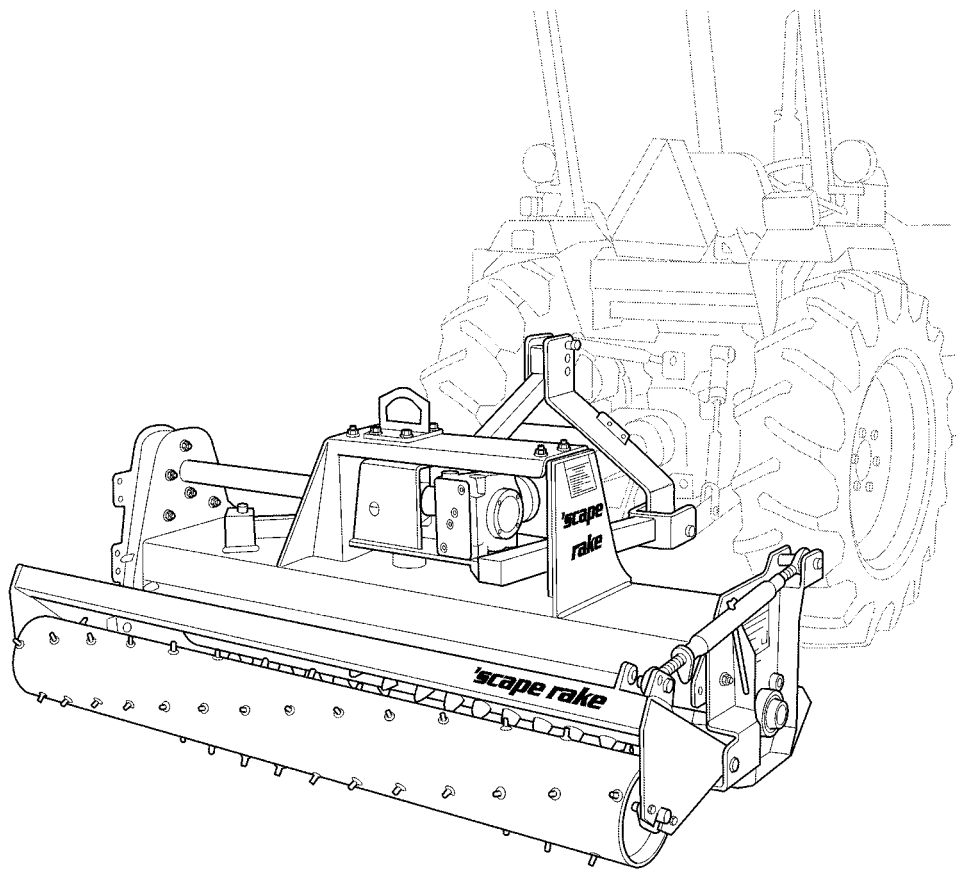


'scape rake

OPERATORS MANUAL FOR MODELS 541, 661 & 721



ATI 
CORPORATION

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DISCLAIMER

THE INFORMATION IN THIS MANUAL IS PROVIDED TO PROMOTE THE SAFE USE OF, AND ASSIST THE OPERATOR IN ACHIEVING THE BEST PERFORMANCE FROM, MODELS 541, 661 and 721 Scape Rake DESCRIBED HEREIN, FOR THEIR INTENDED APPLICATIONS.

SPECIFICATION SHEET

Models	541	661	721
Working Width	54"	66"	72"
Tractor Horsepower (@540 rpm)	14-20 PTO	16-30 PTO	20-30 PTO
Operating Weight	880 lbs. (400 kg)	935 lbs. (425 kg)	955 lbs. (434 kg)
Angle Control	.0-8-15 degrees manual or 0-15 degrees hydraulic left or right		
Angle Pivot	.2" OD pins; with replaceable composite bushings		
Drive Chain	.#80H		
Driveshaft	.1-3/8", 6-spline		
Gearbox	.1.93:1, 2-way		
Hitch	.Cat.1 3-point (ASAE S278.6 quick-hitch compatible)		
PTO Shaft	.Ov1 profile with radial-pin slip clutch		
Rear Roller	.8" Dia.; 7 gauge steel		
Rotor	.1/4" steel wall; Kennametal carbide mining teeth		
Skid Shoes	.AR400 Steel		

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INTRODUCTION

This manual is furnished to you, the owner/operator, as a guide to get the greatest benefit from your Scape Rake. ATI Corporation wants you to be able to get the most use out of your Rake through safe and efficient operation.

Before attempting to operate the Rake, carefully read all sections of this manual. Be sure that you thoroughly understand all of the safety information and operating procedures.

Pay special attention to the **Safety Precautions** and particularly all **DANGER**, **WARNING**, and **CAUTION** notices included in this manual. These items combined form the guidelines for promoting a safe and efficient operating environment, along with continuous, reliable service and minimum down time.

NOTE: References made to left, right, front, and rear are those directions viewed when facing the unit from the rear or when seated in operators seat.

NOTE: Some equipment depicted in illustrations may not reflect exact production model configurations.

NOTE: All safety, operating, and servicing information reflects current production models at the time of publication of this manual.

NOTE: ATI Corporation reserves the right to discontinue models at any time, change specifications, and improve design without notice and without incurring obligation on goods previously purchased and to discontinue supplying any part listed, when the demand does not warrant production.

WARRANTY

This Scape Rake is designed and manufactured to high quality standards. ATI Corporation, therefore, guarantees this machine to be free from defect in workmanship and materials for two years from purchase date. **If the machine is used for rental purposes, the warranty is limited to ninety (90) days.**

Rotor teeth and normal wear are not covered by this warranty.

Misuse, abuse, misapplication, and unauthorized alterations will void this warranty.


SAFETY PRECAUTIONS


THE BEST OPERATOR IS A CAREFUL OPERATOR.


By using common sense, observing general safety rules, and adhering to the precautions specific to the Scape Rake, you, the operator, can promote safe equipment operation. Read and be sure you understand all precautions in this section before operating your Rake. The machine must only be operated by properly trained and authorized operators.

SAFETY PRECAUTION DEFINITIONS

Dangers, Warnings, Cautions, and Notes are strategically placed throughout this manual to further emphasize the importance of personal safety, qualifications of operating personnel, and proper use of the machine in its intended application. These precautions supplement and/or complement the safety information decals affixed to the unit and include headings that are defined as follows:

 **DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING** Indicates a potentially hazardous situation or practice which, if not avoided, could result in death or serious injury.


 **CAUTION** Indicates a potentially hazardous situation or practice which, if not avoided, will result in damage to equipment and/or minor injury.

NOTE: Indicates an operating procedure, practice, etc., or portion thereof, which is essential to highlight.

The Scape Rake must only be operated by qualified persons who are familiar with all information in the operator's manual. Do not attempt to operate the machine in areas with steep inclines, ditches, large rocks, stumps, or holes which may endanger the operator by upsetting the tractor or cause damage to the machine.

THE SCAPE RAKE

1. Read this manual carefully to become familiar with your machine. Lack of operating knowledge can be dangerous and lead to accidents.
2. Keep all shields in place and properly tighten all mounting hardware.

 **WARNING** *Stay clear of rotating drive lines. Do not operate without drive line and slip clutch shields in place and in good condition. Failure to heed these warnings can result in personal injury or death.*

3. Periodically inspect all parts for wear and replace with factory-authorized parts if excessive wear is present.
4. Keep safety decals clean and readable. Replace if missing, damaged, or illegible.
5. Do not modify, alter or permit anyone to modify or alter this equipment or any of its components without written approval from ATI Corporation.


OPERATING THE SCAPE RAKE

1. Never allow anyone to ride on the machine at any time.
2. Keep personnel and objects away from the machine before adjusting angle of the rotor. Serious injury or death may result from getting caught in the machine's pinch point.

SAFETY PRECAUTIONS

OPERATING THE SCAPE RAKE (Cont'd)

3. Do not stand or allow others to stand near the machine while it is operating.
4. Disengage power take-off (PTO) when transporting the machine.
5. Never leave the machine in raised position unattended.
6. Never wear loose clothing when operating the PTO, or when around other rotating equipment.
7. Never clean, adjust, or repair the machine with the tractor's engine running.
8. The operator must never get off the tractor while it is in motion.
9. When servicing or adjusting machine, always shut off the engine and wait until the PTO stops turning before getting off the tractor.
10. Make sure PTO shield is properly installed and secure on both tractor and Scape Rake.
11. Always shut off engine before attaching or detaching PTO shaft to tractor. Attach PTO shaft to machine before attaching to tractor.

 **WARNING** *Keep hands and feet from under Scape Rake at all times. Make certain everyone is clear of the machine before operating.*

SAFETY DECALS

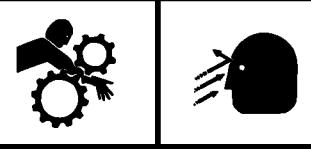
The safety decals appearing in Figure 1 are a sampling of those affixed to the Scape Rake. These examples are not meant to represent all decals, but do illustrate typical precautionary and informational signage relating to Scape Rake operation and use.

IMPORTANT: It is the responsibility of the operator to locate, read, and adhere to all information provided on all decals affixed to the unit being operated.

SAFETY PRECAUTIONS

'scape rake

WARNING



Read and understand the Operator's Manual before attaching tiller or operating the unit.

When starting or operating tiller, keep all bystanders clear of machine; be alert for flying debris. (Max. PTO speed is 540 rpm)

Do not operate tiller if shields are not in place and secured.

Before servicing, cleaning or clearing debris:

- Position PTO control lever to "off".
- Shut down tractor engine.
- Wait for PTO and tiller rotation to stop.
- Lower tiller to ground or block securely.

Consult your tractor operator's manual for front/rear ballast (weight) requirements with tiller installed.

DO NOT STAND OR RIDE ON TILLER.

WARNING



HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

SW700

WARNING

AVOID INJURY FROM ROTATING TEETH

Keep hands, feet, and clothing away.



OIL FILL

OIL LEVEL

WARNING



PINCH POINT HAZARD
KEEP AWAY

To prevent serious injury or death:

- Stop engine, set park brake, remove ignition key and wait for all moving parts to stop before adjusting.
- Keep hands, feet, hair and clothing away from moving parts.
- Keep others away.

DANGER



ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP AWAY!

DO NOT OPERATE WITHOUT =

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE

DANGER



SHIELD MISSING
DO NOT OPERATE

DANGER



SHIELD MISSING
DO NOT OPERATE

DANGER



MANUFACTURED BY
ATI
 CORPORATION
 New Holland
 PA 17657

MODEL SERIAL

541

661

721

399143000

FIGURE 1 Decals

OPERATION

GENERAL SAFETY

The Scape Rake is a machine designed to quickly prepare a level, fine-textured bed, ready for seeding turfgrass. It is intended for conditioning and leveling the top layer of soil; it is not designed to be used as a deep rake. If hard, unbroken soil is encountered, it is recommended that a chisel be used first for two reasons:

1. To break up the soil for more efficient operation.
2. To allow more water to be absorbed, thereby reducing surface erosion.

WARNING *To prevent personal injury, make certain all tractor and Scape Rake safety shields are in place and secure before operating.*

Before dismounting the tractor, disengage PTO, turn off engine, set parking brake and allow the rotating rotor to come to a complete stop.

ATTACHING SCAPE RAKE TO TRACTOR

A. Attach the two lift arms of tractor 3 point hitch to the two lower points of machine hitch frame. You may need to use lift arm adjuster.

B. Attach top link of tractor 3-point hitch to top point of the hitch frame. (You may need to adjust length.)

CAUTION • *Before operating the Scape Rake, be sure the PTO drive shaft overlap is within acceptable limits.*
• *Attach to tractor PTO shaft of 540 RPM only.*

C. Check PTO drive shaft overlap as follows (See Figure 3):

1. Collapse PTO drive shaft lengthwise completely. Then extend by 1/2-inch. This is minimum length.

We recommend no less than 10 inches overlap of the two sections of PTO shaft, in the operating position.

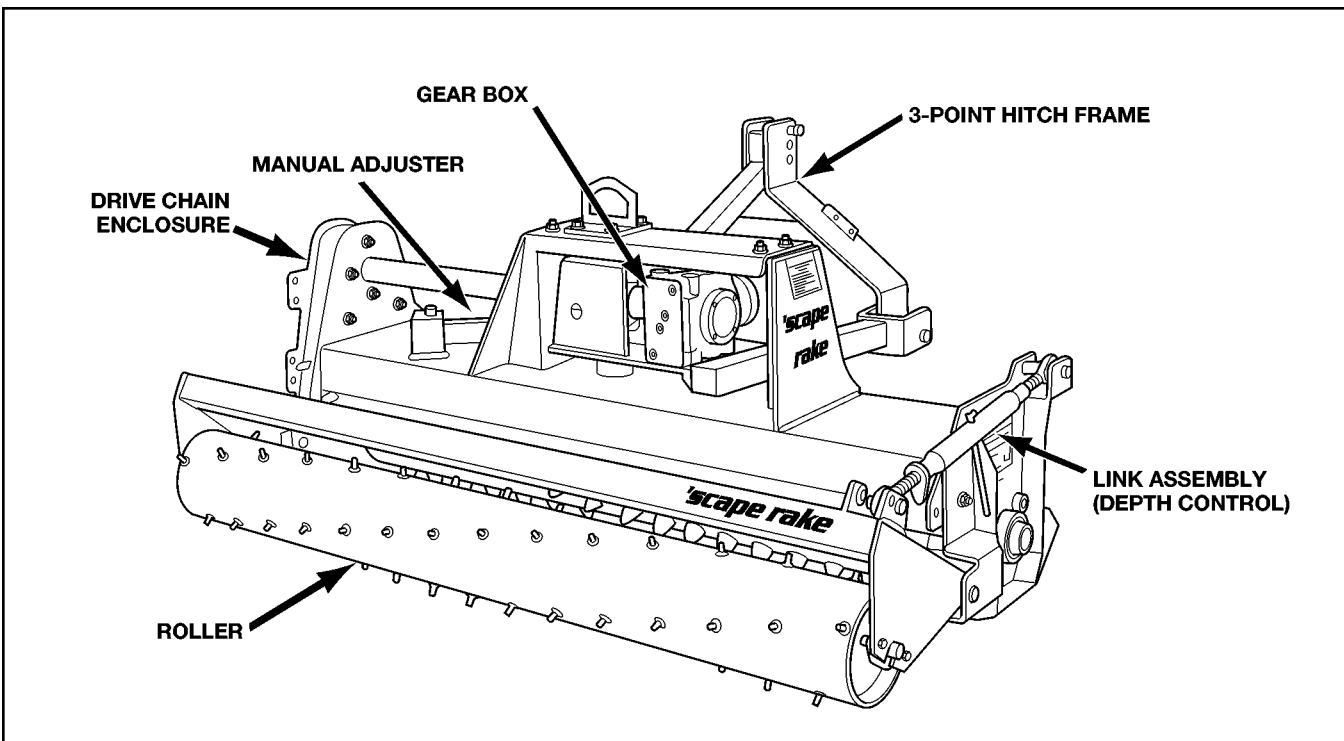


FIGURE 2 Scape Rake General Arrangement

OPERATION

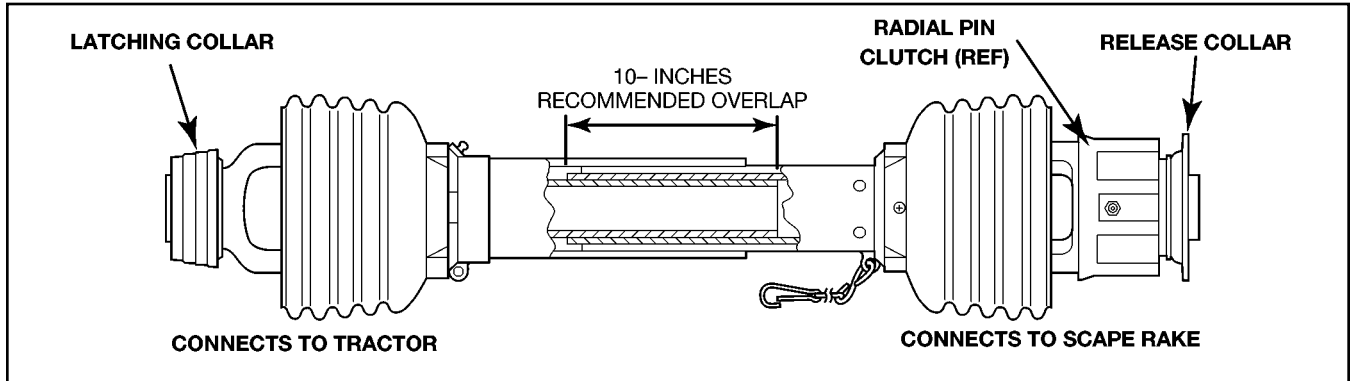


FIGURE 3 Minimum PTO Shaft Overlap

2. Extend PTO drive shaft to point of separating, then push together 10 inches. This is *maximum length*. We recommend no less than 10 inches overlap of the two sections of PTO shaft, in the operating position.

IMPORTANT: *Do not operate the Scape Rake with PTO drive shaft bottomed out in any position of lift travel. If drive shaft does bottom out, contact your dealer to cut it to proper length.*

- D. Connect drive shaft end with radial pin clutch to the rake gearbox shaft. Depress latching pin or release collar to allow drive shaft end to slip onto gearbox shaft. Release latching pin or release collar so it can seat into groove of gearbox shaft. Tug on drive shaft to be sure it is securely connected. Repeat above procedure to attach other end to tractor PTO shaft.

WARNING • *Never attach or detach PTO shaft when engine is running.*

• *When attaching PTO drive-shaft to tractor, it is important that the spring-activated locking system works. A loose drive shaft could slip off and result in personal injury or damage to the equipment.*

- E. Attach/adjust 3-point hitch stabilizer bars or sway chains on tractor to prevent side sway.

- F. When equipped with hydraulic cylinder(s) connect hose ends to tractor remote hydraulic outlets at rear of tractor. Coupler tips must be compatible with tractor couplers. If they are not compatible, contact your tractor dealer.

- G. Ground must be flat and rear roller in raised position for following adjustments.

1. Raise machine, then lower gently to ground. Both ends of the rotor should touch the ground at the same time.

2. Adjust tractor lift linkage as necessary.

- H. For most operations the rake rotor should be parallel with the ground. **Adjust top link so that horizontal section of hitch frame is parallel to ground and vertical section of hitch frame is perpendicular to ground.** (See Figure 4.)

OPERATION

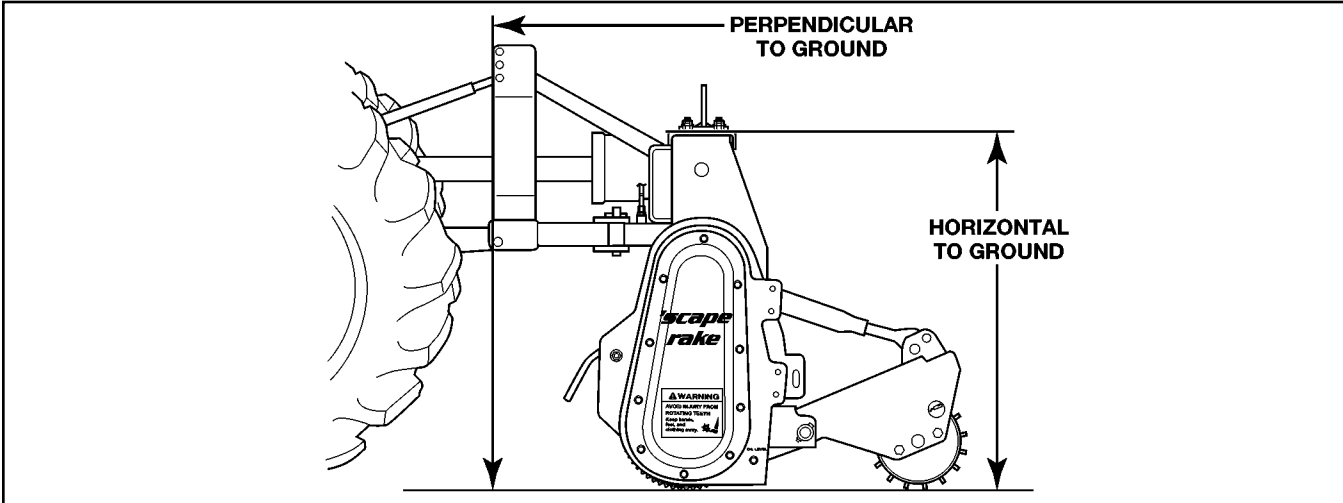


FIGURE 4 Leveling the Rotor

MANUAL ADJUSTERS

WARNING When servicing or adjusting machine, always shut off the engine and wait until the PTO stops turning before getting off the tractor.

The Scape Rake is equipped with two adjustment links that allow the operator to adjust to changing conditions.

- 1. Depth Function** – The depth adjusting link controls the depth that the rotor tills the soil. Retracting the depth adjusting link allows the machine to work deeper, moving more soil. Extending the depth adjusting link raises the rake, keeping the rotor depth shallow. (See Figure 5).

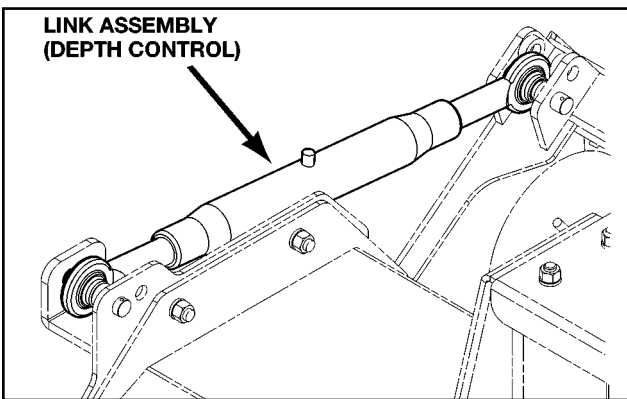


FIGURE 5 Manual Depth - Link Assembly

- 2. Angling Function** – The angling adjusting link controls the angle of the rotor. The machine's angle determines which side the stone windrow discharges.

Retracting the angling adjusting link angles the machine to the right. Extending the angling adjusting link angles the machine to the left. (See Figure 6).

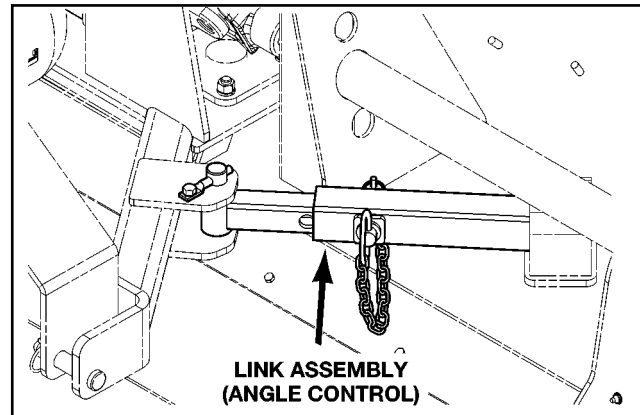


FIGURE 6 Manual Angle - Link Assembly

HYDRAULIC ADJUSTERS - OPTIONAL

The Scape Rake may be equipped with optional hydraulic cylinders that allow the operator to adjust to changing conditions. The tractor's remote hydraulic system provides the power to make the changes to the cylinder. The cylinder functions are:

- 1. Depth Cylinder Function** – The depth control cylinder adjusts the depth that the rotor tills the soil. Retracting the depth control cylinder allows the rake to work deeper, moving more soil. Extending the depth control cylinder raises the rake, keeping the rotor depth shallow. (See Figure 7).

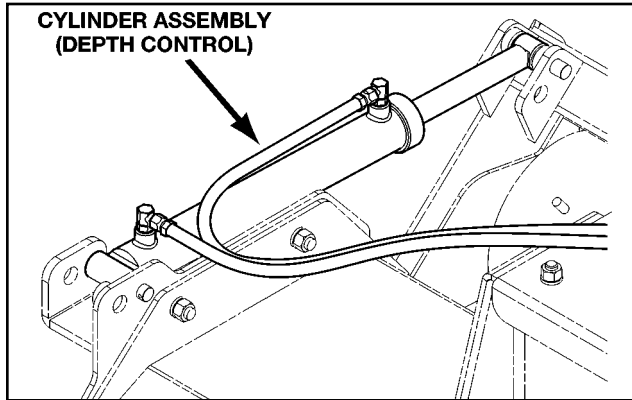


FIGURE 7 Hydraulic Depth - Cylinder Assembly

2. Angling Cylinder Function – The angling cylinder controls the angle of the rotor. The machine's angle determines which side the stone windrow discharges. Retracting the angling cylinder angles the machine to the right. Extending the angling cylinder angles the machine to the left. (See Figure 8).

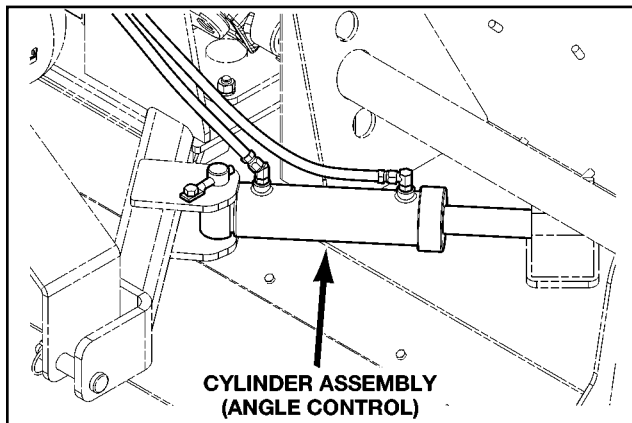


FIGURE 8 Hydraulic Angle - Cylinder Assembly

The electro-hydraulic diverter valve is an option for tractors that only have one hydraulic remote valve and the machine is equipped with two cylinders. It allows the operator to choose between the depth cylinder and angling cylinder by flipping an electric toggle switch. The two-position toggle switch has a lighted indicator to communicate to the operator which function has been chosen.

WEIGHT DISTRIBUTION

Proper weight distribution may require front end weights for stability and steering control when the machine is raised by the tractor's 3-point hitch. It is recommended that no less than 20% of the tractor weight be on the front wheels when the implement is raised to the transport position. Add front end weight as required for stability. REFER TO TRACTOR OPERATOR'S MANUAL.

OPERATION

- A. Lubricate the machine as necessary. Refer to LUBRICATION section of this manual.
- B. Start tractor according to tractor operator's manual. Engage PTO drive with engine at low speed.

WARNING *When engaging soil under certain soil conditions rotation of the rotor may cause tractor to move backwards, if tractor is not moving forward under power, or if brakes are not applied.*

- C. Lower the Scape Rake to ground carefully, placing tractor lift control lever to fully lowered position.

CAUTION *Operating at excessive speeds can cause excessive wear or damage to the machine.*

SUGGESTIONS FOR EFFICIENT SEEDBED PREPARATION

The following suggestions are to be understood as general in nature, since each operator will develop their own style of operation, specific to the plot and terrain that is being prepared.

Soil type and conditions vary considerably and must be addressed individually, as they are encountered.

There are three basic operations that a Scape Rake performs: RAKING, TILLING, and LEVELING.

OPERATION

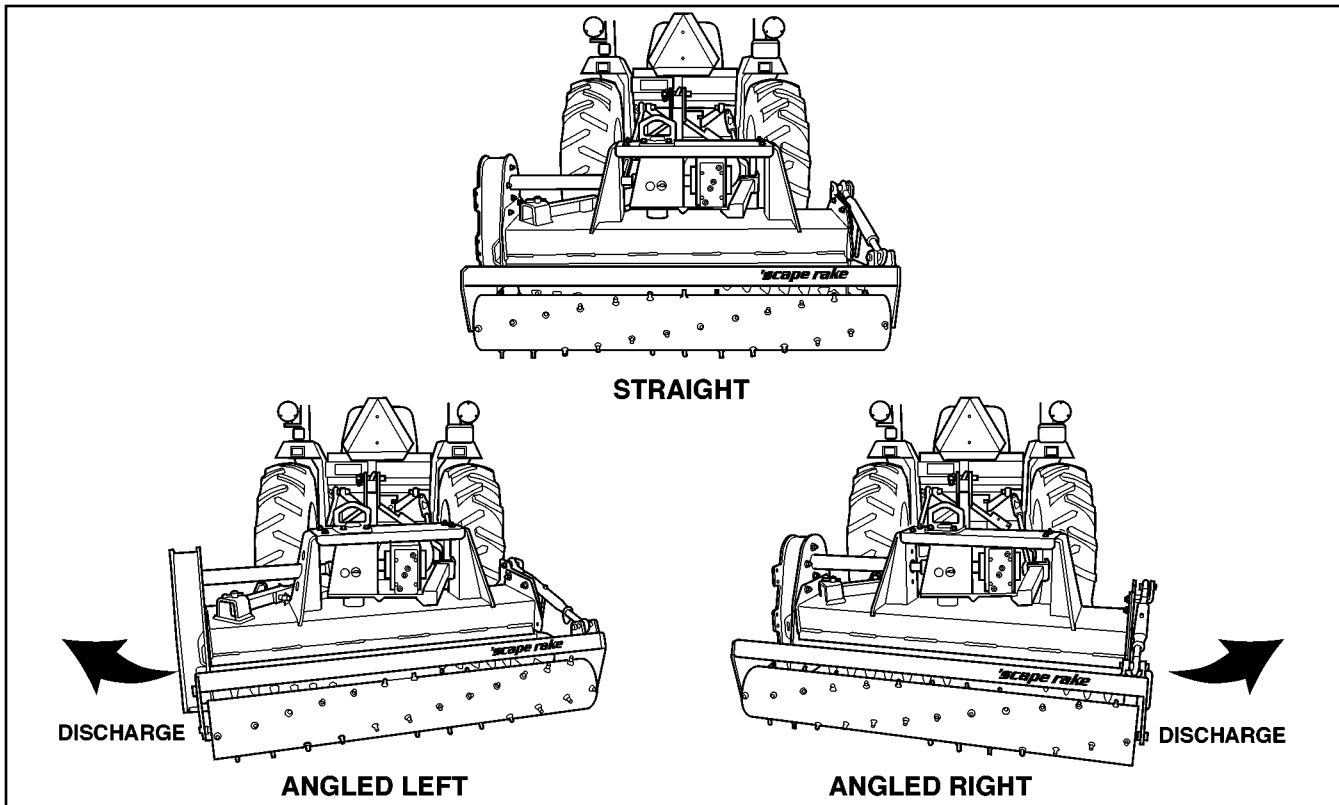


FIGURE 9 Working Angles of the Scape Rake

SUGGESTIONS FOR EFFICIENT SEEDBED PREPARATION (Cont'd)

1. **RAKING** involves removing rocks from the soil surface. This is generally the final operation, but in extremely rocky conditions it is advisable to clear the area of excessive rocks for more efficient operation.

CAUTION *Do not attempt to operate the Scape Rake in areas with heavy weeds, rope, wire, package strapping, or anything that can wrap around the end of the rotor. Steel strapping is extremely abrasive and causes excessive and premature wear when caught in the rake.*

NOTE: • When clearing an area with excessive rocks, adjust rotor depth so it just touches soil surface, then proceed to work and windrow rocks. Keep PTO speed in check.

• Rock windrows should be picked up before they become too large. **Large windrows affect performance and cause premature wear of the Rake.**

The adjustable angling feature of the machine provides added efficiency when clearing an area. By reversing the angle, it is possible to continue moving rocks toward the collection area, while traveling in either direction.

If tractor is equipped with dual remote valves, actuate remote lever controlling “angling” function and position rake to desired angle of operation. (The other remote valve controls rotor depth.)

If tractor is only equipped with a single remote valve, and the optional diverter valve is used, position diverter valve control lever for “angling” function, then actuate tractor remote valve to achieve desired operating angle.

NOTE: Rotor depth adjustment is accomplished in the same manner, except operator must actuate controls that control rotor depth adjustment.

2. **TILLING** is the main operation the machine performs. A rotor setting of 1 to 1-1/2-inches deep is adequate for turfgrass seedbed preparation. In hard soils, it may be necessary to chisel soil prior to using the rake, thus allowing adequate drainage to prevent run-off and erosion as well as retain the moisture needed for new seed. A working depth of 1 to 1-1/2-inches is recommended for tilling in most conditions. Experience will give the operator a feel for the best setting to use. Excessive depth can cause rock jamming.

In rocky conditions the machine should be set at a shallow working depth for more efficiency. When there is excessive build-up of soil in front of the rotor, the soil build-up prevents rocks from being discharged away from the rotor and thus the machine can jam. It is more efficient to make an extra pass at a shallower setting.

The machine drive line is protected by a radial pin clutch. It is designed to slip when the machine is overloaded. Overloading can be caused by an object such as a rock or root caught in the machine or by tilling too deeply in heavy, wet soil.

NOTE: • The machines radial pin clutch is not designed for field adjustment.

• The radial pin clutch produces a loud clicking sound when slipping.
Disengage PTO immediately when clutch is slipping, to prevent wear of the clutch.
The operator should be constantly alert to the rotor speed and load.

3. **LEVELING** occurs during the tilling process. Deeper rotor depth produces the best leveling. More shallow settings produce the smoothest seedbed free of ridges.

In areas where the surface is already fairly clear of rocks and debris, the rotor angle can be reduced, and a working depth of 1-inch is generally satisfactory. Uneven surfaces will require a deeper setting to level soil more effectively.

When possible, it is best to work along contours rather than across them. The leveling function will cut off ridges and fill in valleys. It is possible to work across contours if the operator follows through with the hydraulic depth adjustment by raising it over ridges and lowering it through valleys.

The operator may choose to set the rotor straight parallel to the tractor axle to gain maximum leveling effect. However, when the rotor is straight (see Figure 9), rocks will not discharge to the side. All dirt and rocks gather in front of the rotor. **The operator should be careful not to overload the machine when the rotor is in this position.**

Learning to operate your Scape Rake properly will allow you to get the most efficient use from it with minimal downtime. By keeping the following points in mind, you will be able to work more effectively and efficiently.

Survey the area: Take a few minutes to walk around the jobsite. These few minutes are time well-spent because you can:

1. **Plan a strategy.** Ask yourself some questions about doing the job most efficiently. Where are the highest points on this job? Where are the lowest? Where should I start? Where should I end? Where should I deposit the rocks? These are the types of questions that you should ask yourself before starting each job.
2. **Look for obstructions.** Walk around the jobsite to spot the enemies of your machine. These enemies include: roots, steel strapping, rope, wire, plastic wrapping, or anything that may hinder or damage your machine. Remove these enemies before you start operating. Also, look for permanent objects that may often be buried or hidden on jobsites. These include: drainage pipe, electrical wiring, sewer vents, well covers, concrete slabs, etc.

OPERATION

SUGGESTIONS FOR EFFICIENT SEEDBED PREPARATION (Cont'd)

WARNING *Beware of electrical wires or pipes which may have a shallow cover of earth.*

3. **Prepare for final clean-up.** Clean-up is made easier when you choose an area beforehand that is better for gathering and cleaning up rocks. Areas that are close to your trucks, on solid ground, along a street or grass-covered area are ideal for depositing rocks and debris. Work the final windrows towards this area.

- B. Turn off tractor engine and set parking brake. If equipped with optional cylinders, move remote valve handle back and forth a few times through raise and lower positions to relieve hydraulic line pressures.
- C. Disconnect hydraulic lines from tractor, and store them in a dirt-free location.
- D. Remove tractor top link from the rake.
- E. Remove lynch pin and pins to detach tractor lift arms from the machine. Store pins in lower hitch points of hitch frame.

DETACHING SCAPE RAKE FROM TRACTOR

- A. Place Rake in the straight position. Lower rotor to ground; position rear roller so that both rotor and roller rest on ground to give the rake stability when parked. This will also make re-attaching easier.

LUBRICATION

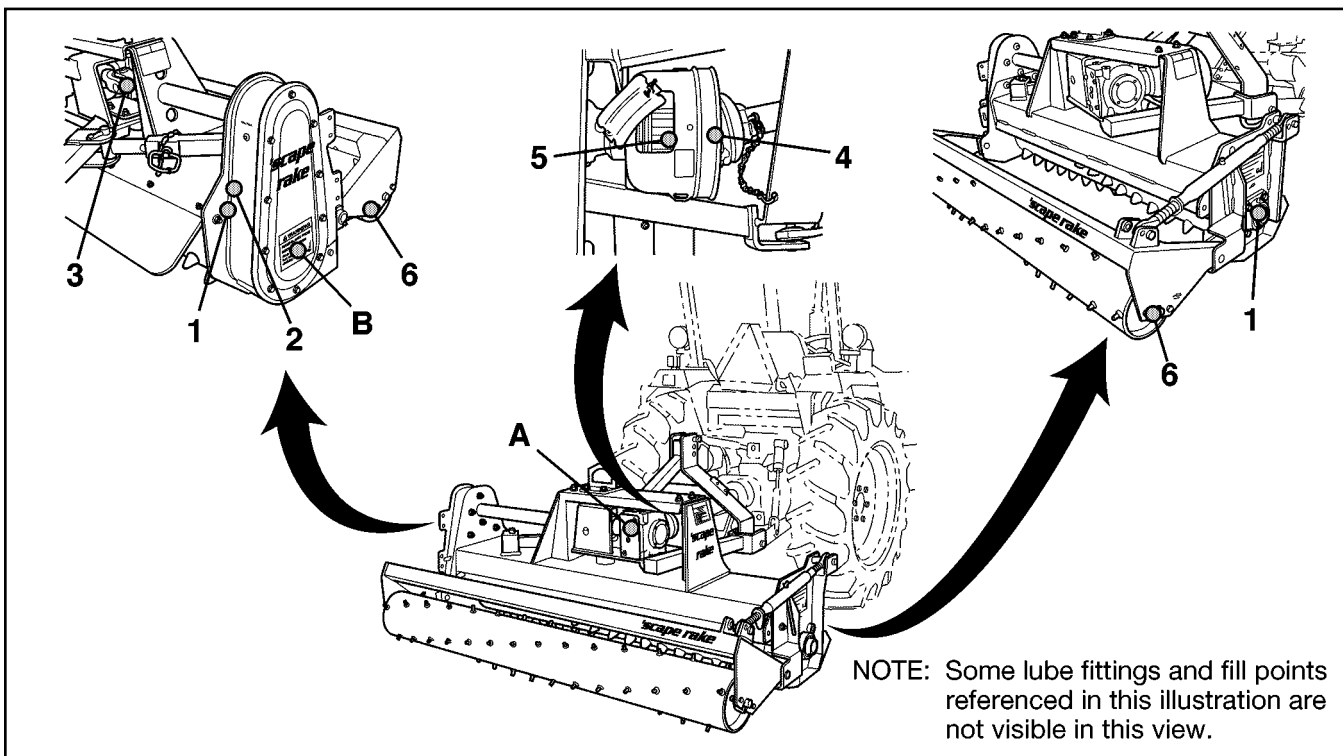


FIGURE 10 Scape Rake Lubrication Points – Typical

LUBRICATION

The lubrication points in the accompanying illustration reflect standard production models. Quantities and locations of lube fittings, fill plugs, drain plugs, etc. could vary, if changes in machine configuration warrant.



CAUTION *Worn grease fittings that will not hold the gun, and fittings with a stuck check ball, must be replaced.*

EVERY 10 HOURS

Apply grease to fittings using grease gun to the following.

1. Rotor Bearings (2)
2. Driveshaft Bearing (2)
3. Driveshaft Universal Joint (1)
4. PTO Shaft Universal Joints (2)
5. Radial Pin Slip Clutch (1)

EVERY 20 HOURS

Apply grease to fittings using grease gun to the following.

6. Rear Roller Bearings (2)

NOTE: • The Main Hinge Pin and Rear Roller Frame is equipped with composite bushings and do not require lubrication.

• Do not over-grease lube points. One to two pumps of grease should offer the sufficient quantity of lubricant if the lube schedule is followed. Excessive grease only provides a passage for dirt to enter the bearing races. Be sure to wipe off any remaining grease from around the bearings.

FILL POINTS

A. Gearbox — with the machine level, remove oil check plug located on back of gearbox (lower hole in gearbox shield). Correct oil level is at bottom of check plug. Add oil if necessary. Gearbox capacity is 2.5 pints. Use anti-foam SAE 90W oil.

B. Drive Chain Case — check the oil level in the drive chain case with the machine level. Remove lower check plug on side of case. Oil level should be maintained to the bottom of check plug. Add oil if necessary. Chain case capacity is 3.3 pints. Use anti-foam SAE 90W oil.

MAINTENANCE

DRIVE CHAIN ADJUSTMENT

Check chain tension after the first 40 hours of operation. Then check/adjust chain every 100 hours following initial adjustment. (See Figure 11.)

Before performing maintenance as outlined below be sure to:

1. Lower machine to level ground.
2. Turn off tractor.
3. Set tractor brakes.
4. Remove the bolts (8), nuts (2) and access cover on the chain case. Use caution to prevent oil spill from the chain case.
5. Check slack of the chain. Measure [A] midway between the sprockets on the drive side (non-idler) of the chain. If there is more than 3/4" of slack adjust the chain. Loosen the idler bolt one full turn, adjust

the idler assembly toward the drive side of the chain [A], to a snug tension, do not over tighten. Tighten the idler bolt, then recheck slack.

NOTE: To ensure proper sealing make sure the gasket and access cover are free of dirt and debris.

6. Replace the access cover, bolts, nuts and refill with oil (anti-foam SAE 90W) to specified level (see Lubrication Section on page 11).

NOTE: Failure to adjust tension will result in premature failure and could void your warranty.

WARNING *If machine must be raised off the ground, for servicing, block up securely.*

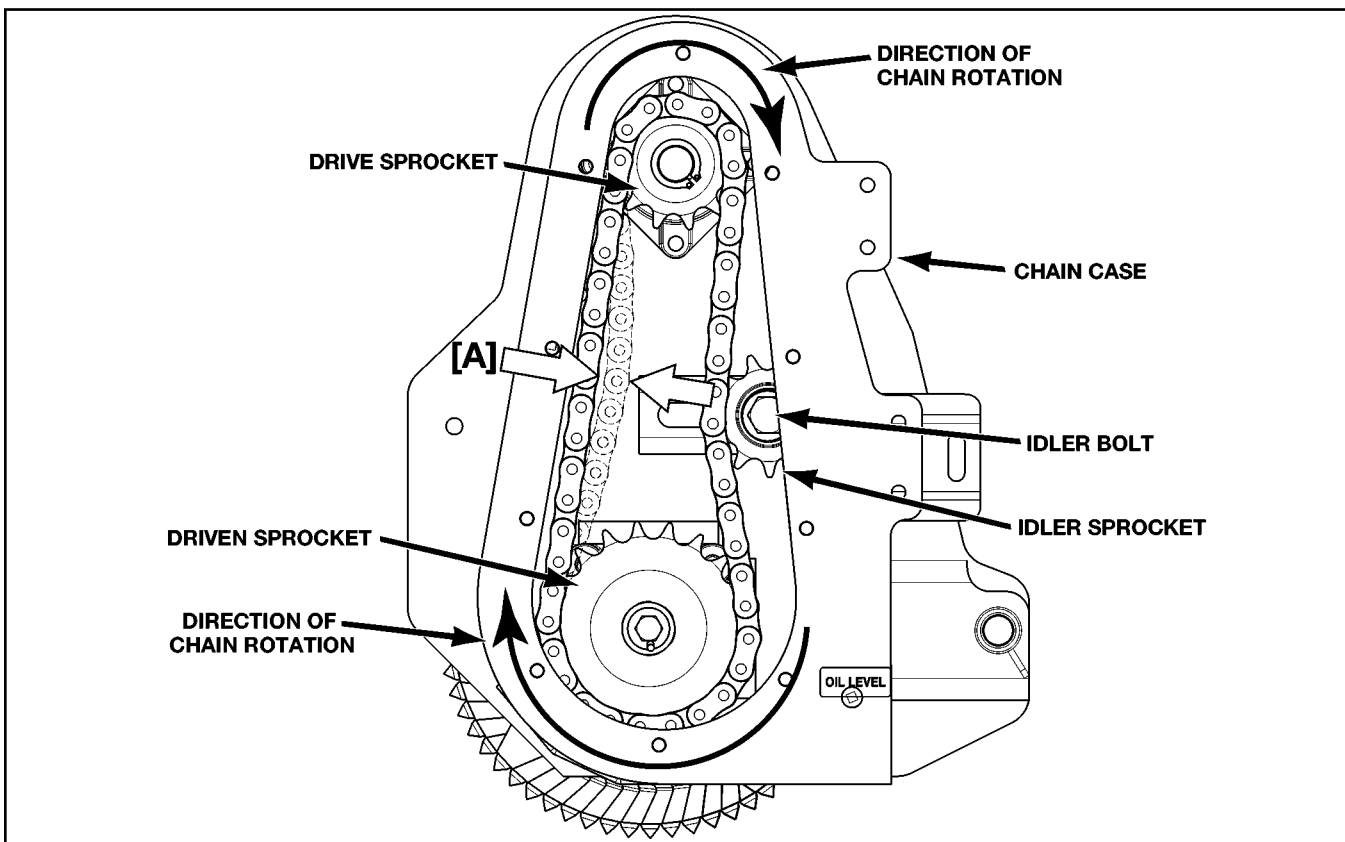


FIGURE 11 Drive Chain Adjustment

ROTOR TOOTH WEAR

Carbide teeth offer dramatically longer life. Due to tooth spacing, and rotor tubing material, replacement carbide teeth cannot be welded onto an existing rotor. A new rotor with carbide teeth can be ordered for your machine. Check with your authorized dealer for specific pricing.

BEFORE EACH USE

1. Check machine daily for loose, bent, broken, or missing parts.
2. Observe machines general condition, noting points that may need attention.
3. Check rotor and roller to be sure no foreign objects such as wire or weeds are wrapped around them.
4. Make certain drive line shields are in place and in good condition.
5. During operation, listen for abnormal sounds which might indicate loose parts, damaged bearings or other damaged and worn parts. Correct any problem immediately.

AFTER EACH USE

1. Clean all debris from machine especially on the rotor and roller.
2. To prevent rusting, touch up any spots where paint may have worn off.
3. Store in a clean, dry place.

TROUBLESHOOTING GUIDE

SYMPTOM	POTENTIAL CAUSE	REMEDY
Rotor does not turn.	Tractor PTO is not engaged.	Engage tractor PTO.
	Obstruction jammed between the rotor and frame.	Clear obstruction from the rotor.
	PTO shaft is improperly installed.	See tractor operator's manual. Warning: Turn off tractor before performing any work on PTO drive system.
	PTO shaft is worn.	See dealer for appropriate service.
Depth/Angle cylinder will not operate.	Air present in the hydraulic system.	Continue to engage auxiliary hydraulics.
	Auxiliary Hydraulic hose ends are not properly attached to couplers.	Properly attach the auxiliary hydraulic hose.
Rotor stalls too easily.	Working depth too deep.	Reduce working depth.
	Ground speed too fast.	Reduce ground speed.
	PTO clutch is worn or in need of service.	See tractor operator's manual or see dealer for appropriate service.
Fluid leaks.	Loose or damaged hoses.	Tighten or replace hose.
	Loose or damaged connections.	Tighten or replace connections.
	Chain case over filled.	Drain oil level to proper level.

STORAGE

When the seeding season is over, the Scape Rake should be thoroughly checked so a minimum amount of work will be required to put it back in operation for the next season. The following recommendations are offered to aid in storing the rake correctly.

1. Clean the machine thoroughly.
2. Lubricate the machine. Check the fluid levels; fill to proper level if necessary.

3. Inspect machine for badly worn or damaged parts. Replacement parts may be obtained from your authorized dealer.
4. Touch-up paint to prevent rust and maintain the machines appearance.
5. Store in a clean, dry place.

ORDERING PARTS

If ordering parts becomes necessary for your Scape Rake, call your **authorized dealer** to obtain correct parts replacement information. Please have model number, serial number, part number, and other necessary information ready when ordering parts.

IMPORTANT: Always order parts using part numbers from the Scape Rake Parts Manual supplied with your unit. Replacement manuals may be obtained at www.preseeder.com/service..

